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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,159	04/08/2004	Yasuo Takebe	43888-301	7042

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EXAMINER	
CHUO, TONY SHENG HSIANG	
ART UNIT	**PAPER NUMBER**
1745	

MAIL DATE	DELIVERY MODE
06/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/820,159	TAKEBE ET AL.	
	Examiner	Art Unit	
	Tony Chuo	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 June 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10 and 13* is/are pending in the application.

4a) Of the above claim(s) *4-6,9,10 and 13* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,7 and 8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn. Claims 1-10 and 13 are currently pending. Claims 11, 12, and 14 have been cancelled. Claims 4-6, 9, 10, and 13 are withdrawn from further consideration as being drawn to a non-elected invention. Claims 1-3, 7, and 8 do overcome the previously stated 103 rejections. However, upon further consideration, claims 1-3, 7, and 8 are rejected under the following new 103 rejections.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reindl et al (US 2002/0110713) in view of Rabellino et al (US 2003/0143129).

The Reindl reference discloses a fuel cell assembly comprising: a fuel cell "11"; a fuel supply system "22"; and an oxidant supply system "20" that further comprises filters and/or other air purification devices (See paragraph [0047],[0048] and Figure 1). Examiner's note: It is well known in the art that a fuel cell comprises an anode, a cathode, and an electrolyte layer separating the anode from the cathode.

However, Reindl et al does not expressly teach an air purifying apparatus that comprises a first pollutant removing means that oxidizes a pollutant in the air and a second pollutant removing means that adsorbs and removes the pollutant, wherein the second pollutant removing means adsorbs and removes the pollutant after the pollutant has been oxidized, wherein the first pollutant removing means includes a catalyst that oxidizes the pollutant by means of oxygen in the air, and a catalyst that has an oxidizing activity with respect to at least one selected from the group consisting of organic substances, nitrogen oxides, sulfur oxides, ammonia, hydrogen sulfide, and carbon monoxide, and wherein the catalyst is at least one selected from the group consisting of Pd, Pt, Ru, and Rh. The Rabellino reference discloses an air purification system "100" comprising an oxygen catalyst unit "200" and an adsorption unit "150", wherein the oxygen catalyst unit converts hydrocarbons and carbon monoxide to carbon dioxide and water before the air is directed to the adsorption unit to remove the carbon dioxide (See paragraphs [0029],[0032]). It also discloses an oxidation catalyst that is made of palladium or platinum (See paragraph [0043]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Reindl fuel cell assembly to include an air purifying apparatus that comprises a first pollutant removing means that oxidizes a pollutant in the air and a second pollutant removing means that adsorbs and removes the pollutant, wherein the second pollutant removing means adsorbs and removes the pollutant after the pollutant has been oxidized, wherein the first pollutant removing means includes a catalyst that oxidizes the pollutant by means of oxygen in the air, and

a catalyst that has an oxidizing activity with respect to at least one selected from the group consisting of organic substances, nitrogen oxides, sulfur oxides, ammonia, hydrogen sulfide, and carbon monoxide, and wherein the catalyst is at least one selected from the group consisting of Pd, Pt, Ru, and Rh in order to utilize an air purification device that performs air purification more efficiently and extends the life of the adsorption unit and the oxygen catalyst unit.

4. Claim 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reindl et al (US 2002/0110713) in view of Rabellino et al (US 2003/0143129) as applied to claim 1 above, and further in view of Kim et al (US 6080059).

However, Reindl et al as modified by Rabellino et al does not expressly teach a porous material that is at least one selected from the group consisting of activated carbon, alumina, zeolite, and silica and carrying at least one selected from the group consisting of permanganates, alkali salts, alkaline hydroxides, and alkaline oxides. The Kim reference discloses activated carbon, activated alumina, or zeolite impregnated with potassium permanganate that is used to remove air pollutants (See column 6, lines 55-65).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Reindl/Rabellino air purification device to include a porous material that is at least one selected from the group consisting of activated carbon, alumina, zeolite, and silica and carrying at least one selected from the group consisting of permanganates, alkali salts, alkaline hydroxides, and alkaline oxides in order to more efficiently remove air pollutant gases by adsorption.

Examiner's note: The Kim reference is pertinent to Reindl reference, Rabellino reference, and the applicant's field of endeavor because it solves the same problem of purifying air by removing pollutants.

Response to Arguments

5. Applicant's arguments, see Remarks, filed 6/14/07, with respect to the rejection(s) of claim(s) 1-3, 7, and 8 under 35 USC 103 have been fully considered and are persuasive. Therefore, the rejections have been withdrawn. However, upon further consideration, new ground(s) of rejection are made in view of Reindl et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Chuo whose telephone number is (571) 272-0717. The examiner can normally be reached on M-F, 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TC

JONATHAN CREPEAU
PRIMARY EXAMINER